

FORMATION OF SUPERPARAMAGNETIC PARTICLES

Abstract

The present invention features a method for preparing superparamagnetic iron particles by the *in situ* formation of these particles in a cross-linked starch matrix or by the formation of a superparamagnetic chitosan material. The superparamagnetic materials are formed by mild oxidation of ferrous ion, either entrapped into a cross-linked starch matrix or as a chitosan-Fe(II) complex, with the mild oxidizing agent, nitrate, under alkaline conditions. The present invention further features superparamagnetic iron compositions prepared by the method of the invention. The compositions of the invention are useful for the separation, isolation, identification, or purification of biological materials.